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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/631,743	08/04/2000	Richard William Ezell	49581-P022US-09906908	9812

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EXAMINER

SHINGLETON, MICHAEL B

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09-631,743

Applicant(s)

Ezell

Examiner

MICHAEL B SHINGLETON

Group Art Unit

2817

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 1-22-2002
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-80 is/are pending in the application.
- Of the above claim(s) 77-80 is/are withdrawn from consideration.
- ☒ Claim(s) 7-24 and 36-76 is/are allowed.
- ☐ Claim(s) _____ is/are rejected.
- ☒ Claim(s) 4 and 26-35 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 2+4 ☐ Interview Summary, PTO-413
- ☒ Notice of References Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

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DETAILED ACTION

Applicant's election with traverse of Group I in Paper No. 5 is acknowledged. The traversal is on the ground(s) that some of the combination claims recite specific features of the subcombination.

Applicant also reminds the examiner of the consideration of rejoinder should the AB(broad) be found unallowable. This is not found persuasive because the restriction requirement mentioned evidence claim 1 that is AB(broad) and set forth all other conditions that is required of a proper restriction. Note that claims 3 and 17 are dependent claims and do not recite the details of the variable capacitor as set forth in claim 77. Also note that claim 36 does not recite the details of variable capacitor as set forth in claim 77. Applicant also reminds the examiner of the consideration of rejoinder should the AB(broad) be found unallowable.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ibukuro 4,961,057 (Ibukuro). *Keep*

Figure 3 of Ibukuro discloses at least two series connected amplifiers wherein a “second” amplifier stage is any stage after the amplifier stage that is directly connected to a capacitor that is also directly connected to the “IN” terminal. These “second” amplifier stages include a variable capacitor CV2-4 that is adjustable so as to maintain the high frequency response of the amplifier. Note that column 3 starting at line 45 and continuing to the bottom of the column sets forth the frequency response and states that “a suitable selection of the AGC amplifiers of FIG. 2 and a suitable selection of parameters, an AGC amplifier for compensating a cable loss...can be realized”.

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Claim 25 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Meyer 6,049,251 (Meyer).

KWP

Meyer discloses a method for providing a variable gain amplification having the steps of selecting the operating mode, i.e. high gain, low gain or high-overload gain modes based at least in part upon the input signal characteristic. This selection varies the gain of the amplifier as per column 4, around lines 24-64.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Ibukuro 4,961,057 (Ibukuro).

Figure 3 of Ibukuro discloses at least two series connected amplifiers wherein a "second" amplifier stage is any stage after the amplifier stage that is directly connected to a capacitor which is also directly connected to the "IN" terminal. These "second" amplifier stages include a variable capacitor CV2-4 that is adjustable so as to maintain the high frequency response of the amplifier. Note that column 3 starting at line 45 and continuing to the bottom of the column sets forth the frequency response and states that "a suitable selection of the AGC amplifiers of FIG. 2 and a suitable selection of parameters, an AGC amplifier for compensating a cable loss...can be realized". Ibukuro does not show varying resistances for the amplifier stages so as to control the gain of these stages.

It is conventional to make the load or "common" resistors of an amplifier variable to control or vary the gain.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the appropriate resistive elements of Ibukuro variable so as to vary the gain as is commonly known in the art to do.

Ibukuro does not show a differential arrangement of transistors. A differential arrangement is a balanced arrangement known in the art to be composed of two unbalanced amplifiers.

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Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to take the unbalanced arrangement and form a balanced arrangement by composing the balanced arrangement of two unbalanced amplifiers of Ibukuro so as to be able to amplify balanced signal as is conventionally known.

Ibukuro is silent on whether or not the device is formed on a single chip. All the elements shown in Figure 3 are integrable and integration is a well-known structure to save space.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the circuit of Ibukuro so as to save space as is conventionally known in the art.

Allowable Subject Matter

Claims 4 and 26-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to tie the adjustment of gain with the adjustment of the frequency responsive capacitor in a two-stage amplifier arrangement. The prior art fails to disclose a multi-mode amplifier system as defined by the instant specification whose operating mode is based at least in part on an input signal characteristic and the gain of the amplifier is based at least in part on the selected operating mode with the third order intercept OIP3 or IIP3 being maintained. The amplifier system is recited in the specification as a two-stage system.

Claims 7-24 and 36-76 are allowed. The prior art fails to disclose the two-stage arrangement having multiple modes that can both maintain the OIP3 and IIP3 intercept points. The prior art fails to suggest or teach a method for maintaining a high frequency response in a variable gain amplifier constant by tying together the adjustment of the variable capacitor and the varying of the gain. The prior art fails to disclose a method of adjusting gain in a two-stage arrangement that adjusts both common resistors of a first stage and the load resistors of the second stage to maintain the OIP3 and IIP3 intercept points.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ezell 6,100,761 and 6,218,899 both disclose the use of a single stage amplifier that maintains the third order intercept points

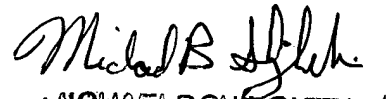
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is 703-308-4903. The examiner can normally be reached on Monday-Thursday from 8:30 to 4:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

MBS

April 18, 2002


MICHAEL B SHINGLETON
PRIMARY EXAMINER
GROUP ART UNIT 2817